

**BEFORE THE  
PUBLIC SERVICE COMMISSION OF WISCONSIN**

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Joint Application of Wisconsin Power and Light  
Company and Wisconsin Electric Power Company  
For Certificate of Authority for Edgewater Generating  
Station Unit 5 NOx Reduction Project

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Docket No. 05-CE-137

**CUB AND CLEAN WISCONSIN'S  
DISCOVERY QUESTIONS TO WISCONSIN ELECTRIC POWER COMPANY  
PURSUANT TO THE COMMISSION'S NOTICE OF TECHNICAL CONFERENCE**

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To: Kate Phillips  
[Catherine.Phillips@we-energies.com](mailto:Catherine.Phillips@we-energies.com)

PLEASE TAKE NOTICE that the Citizens Utility Board of Wisconsin ("CUB") and Clean Wisconsin ("CW") require Wisconsin Electric Power Company ("WEPCO") to produce the requested documents and answer the interrogatories in accordance with Wis. Stat. §§ 804.08, 804.09, Wis. Admin. Code § PSC 2.24(1), and the Commission's Notice of Technical Conference mailed March 27, 2009. Please note that the Definitions and Instructions accompanying CUB and CW's first discovery to WEPCO apply to these requests. I am authorized to state that Sierra Club has reviewed the public versions of these questions and concurs that they should be addressed at the Technical Conference.

## **INTERROGATORIES**

CUB-CW/Inter-2      In Appendix A of the Company's December 18, 2008 Supplemental Application filed with the Commission, reference is made to a spreadsheet model that was used to evaluate the proposed environmental upgrade to Edgewater 5.

- a) Please identify the forecasts of marginal capacity and energy prepared by VENTYX in September 2008, including but not limited to all assumptions made and inputs used.
- b) Please identify the projected fuel, O&M costs, capital costs, and performance parameters (such as heat rate) for Edgewater 5 that were used in this study.
- c) Please identify all assumptions regarding the projected annual cost of allowances for CO<sub>2</sub>, SO<sub>2</sub>, and NO<sub>x</sub> (in \$/Klbs), and the basis for these assumptions.
- d) Please identify any calculations of annual carrying charges and the assumptions and input used.
- e) Please identify all changes made and any updates to the spreadsheet analyses.

CUB-CW/Inter-3      On April 2, 2009, the Company provided CONFIDENTIAL material in electronic files on a CD that contained information on six EGEAS runs, as summarized in the table in Confidential Exhibit A.<sup>1</sup> The NPV figures shown in the table are in 2008\$ and include the EGEAS extension period.

- a) Scenarios 1, 2, and 3 appear to utilize different prices for CO<sub>2</sub> allowances and Scenario 2 appears to be the only scenario that utilizes SO<sub>2</sub> and NO<sub>x</sub> allowance prices. Are there other differences between these three scenarios? If so, please describe these differences in detail.
- b) Please confirm that scenario 1 assumes zero costs for CO<sub>2</sub>, SO<sub>2</sub>, and NO<sub>x</sub> allowances?
- c) Please confirm that scenario 2 assumes non-zero costs for CO<sub>2</sub>, SO<sub>2</sub>, and NO<sub>x</sub> allowances.
- d) Please confirm that scenario 3 assumes non-zero costs for CO<sub>2</sub>, and zero costs for SO<sub>2</sub> and NO<sub>x</sub> allowances.

CUB-CW/Inter-4      In the response to Staff's Data Request 2.01 part a, reference is made to net present value savings of three dollar amounts. Please confirm that the EGEAS runs from which these figures were derived are the runs provided on April 2<sup>nd</sup> and are summarized in the table in Confidential Exhibit A. Also, please provide the cost projections provided by ICAP Energy for SO<sub>2</sub> and NO<sub>x</sub>, and the basis for them.

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<sup>1</sup> The exhibits are based on confidential information provided by the Company. The confidential exhibits referenced in this submission are being provided to the Company and the Company has confirmed that it will forward this information to all parties with which it has a confidentiality agreement. Copies of the confidential exhibits will be provided to Commission staff at the Technical Conference to be held April 16, 2009.

- CUB-CW/Inter-5 In the response to Data Request 2.01 part b, reference is made to other savings estimates from the spreadsheet analyses. Please describe in detail all differences in assumptions between the EGEAS runs referenced in part a) and the spreadsheet analyses referenced in part b) of the response to Data Request 2.01.
- CUB-CW/Inter-6 In the response to Data Request 2.01, attachment 1, pages 1, 2, and 3 show different generation build-out plans. Please identify which EGEAS runs that each of these plans was extracted from.
- CUB-CW/Inter-7 Did the Company perform any other analyses, besides those referenced above, during the last three years of the economic benefits associated with the continued operation of Edgewater 5? If so, please provide these analyses, including all work papers and assumptions.
- CUB-CW/Inter-8 In WPL's Application, Edgewater 5 is described as having a design gross capacity of 380 MW plant (WPL Application, p. 3). WEPCO owns 25% of this plant, which should make WEPCO's share 95 MW. Please explain whether the WEPCO EGEAS runs model Edgewater 5 at 95 MW. If they do not, please identify the MW modeled and explain the basis for the difference.
- CUB-CW/Inter-9 Confidential Exhibit B attached to these questions contains excerpts from the EGEAS inputs for emission allowances.
- a) Please provide a table showing the allowance prices assumed for each pollutant for each year from 2008 through 2037.
  - b) Please provide a detailed description of the basis of each price scenario for allowances.
  - c) If the allowance prices assume or are based upon any particular environmental regulations or legislation, please describe the assumed regulations or legislation.
- CUB-CW/Inter-10 In EGEAS runs performed by the Company, please explain in detail how EGEAS treats emission allowance costs. Specifically, are these costs added to fuel and variable O&M costs for the purposes of determining whether or not a generating unit is dispatched? Or, are the units dispatched in EGEAS based only on fuel and variable O&M and allowance costs added on after the dispatch is established?
- CUB-CW/Inter-11 For each of the six EGEAS runs provided on April 2, 2009, there appear to be at least two output files (CANAL.out and Final-report.out). Page 97 of the CANAL.out file for the Edge5-5CntlCO2 scenario provides a summary of the NPV of the total cost of each scenario, as shown in Confidential Exhibit C attached to these questions.

- a) Please indicate the column in this summary where emission allowance costs are contained.
- b) Please indicate the page numbers in either output file which show the calculations that include emission allowance costs.

Interrogatories 12, 13, and 14 relate to specific references contained within the Confidential EGEAS results produced by WEPCO and reproduced in the confidential exhibits referred to this in these requests. The confidential version of these questions is being provided to WEPCO via e-mail to be distributed by WEPCO to those parties with whom it has entered into confidentiality agreements. These three questions will be produced to Commission staff at the Technical Conference.

CUB-CW/Inter-15 Confidential Exhibit D attached to these questions shows an excerpt from page 365 of the Final-report.out file for the Edge5-5CntlCO2 scenario, which is an annual system emission report. Page 369 of the output file (not provided here) contains a similar annual emission summary.

- a) Please explain in detail how the allowance costs and allowance credits are calculated, and provide a sample calculation for one year.
- b) Please explain how these costs and credits are included in the NPV costs as shown in Confidential Exhibit A.

CUB-CW/Inter-16 Please provide actual annual MWH output, fuel costs, O&M costs, and capital expenditures for Edgewater 5 from 2003 to 2008.

CUB-CW/Inter-17 Please provide annual delivered fuel costs for Edgewater 5, in \$ per ton, and the source of this coal for the years 2003 to 2008.

CUB-CW/Inter-18 Please provide the Company's projections for annual fixed and variable O&M and capital expenditures for Edgewater 5 for the years 2008 through 2037. Also, please show how these projections are converted to the values input into EGEAS, including but not limited to the initial value and the trajectory assumed. Include any expected major capital expenditures for future environmental upgrades beyond the SCR proposed in this proceeding, and the basis for them.

CUB-CW/Inter-19 The EGEAS runs provided by the Company contain projections of future coal prices.

- a) Are there different projections for different units, or all or units assumed to have the same price for coal?
- b) Did the Company develop base, high, and low coal price scenarios, or did the Company utilize a single base case price forecast?
- c) Please provide a table showing all annual coal prices assumed in EGEAS from 2008 to 2037.

- d) Please provide the basis for these coal price forecasts, including all underlying assumptions as well as all other recent price forecasts the Company has reviewed that identify future prices for comparable quality coal.

CUB-CW/Inter-20      The EGEAS runs provided by the Company contain projections of future natural gas prices.

- a) Are there different projections for different units, or all or units assumed to have the same price for natural gas?
- b) Did the Company develop base, high, and low natural gas price scenarios, or did the Company utilize a single base case price forecast?
- c) Please provide a table showing all annual natural gas prices assumed in EGEAS from 2008 to 2037.
- d) Please provide the basis for these natural gas price forecasts, including all underlying assumptions as well as all other recent price forecasts or market forward contracts or future prices for natural gas that the Company has reviewed.

CUB-CW/Inter-21      The EGEAS runs provided by the Company contain projections of future other fuels prices.

- a) Are there different projections for different units, or all or units assumed to have the same price for other fuels?
- b) Did the Company develop base, high, and low other fuels price scenarios, or did the Company utilize a single base case price forecast?
- c) Please provide a table showing all annual other fuels prices assumed in EGEAS from 2008 to 2037.
- d) Please provide the basis for these other fuels price forecasts, including all underlying assumptions.

CUB-CW/Inter-22      The EGEAS runs provided by the Company contain projections of peak load and annual energy requirements.

- a) Please provide actual peak loads and annual energy requirements for 2003 through 2008.
- b) Please provide the basis for the forecasts of peak load and annual energy requirements assumed in the EGEAS runs.

CUB-CW/Inter-23      Do the Company's peak load and energy forecasts include the impacts of energy efficiency, conservation, and demand response? Please provide a detailed projection of the annual impact of energy efficiency, conservation, and demand response on the Company's forecasts both at current energy efficiency levels and at the 2% level included in the Global Warming Task Force Final Report.

CUB-CW/Inter-24      Please provide the assumptions made for reserve margin in the Company's EGEAS runs, and the basis for them.

- CUB-CW/Inter-25 In the EGEAS runs made by the Company, several different types of generating capacity are made available as planning alternatives for EGEAS to evaluate and select as part of the preferred plan. Please provide the year of first availability, capital costs, fixed and variable O&M costs, and operating characteristics (such as heat rate, forced outage rate, etc.) and the basis for these assumptions. Include any assumptions made about short term and long term purchases.
- CUB-CW/Inter-26 Do the generation build-out plans in each of the six EGEAS runs provided by the Company on April 2<sup>nd</sup> comply with Wisconsin's current Renewable Portfolio Standards over the 2008 to 2037 planning horizon? Do any of the runs comply with the projected Renewable Portfolio Standard of 25% by 2025 as contained in the Global Warming Task Force Final Report? If so, please provide the output or calculations that demonstrate compliance. If not, please indicate what additional actions would be required to achieve compliance.
- CUB-CW/Inter-27 In the EGEAS runs made by the Company, was the Edgewater 5 unit with the environmental upgrade made an option or planning alternative for EGEAS to select (as EGEAS does with other planning alternatives), or was it assumed to be installed?
- CUB-CW/Inter-28 In the EGEAS runs made by the Company, estimates are made for fixed and variable O&M costs for existing generating units. Please provide the basis for those projections.
- CUB-CW/Inter-29 Please provide the calculations of the annual carrying charges used for upgrades to Edgewater 5 and all other types of generation included in the EGEAS runs, including all assumptions and inputs, and the basis for them.
- CUB-CW/Inter-30 Please explain what is meant by "Rebound Benefits" in the EGEAS runs. Explain all inputs and outputs, and the effect on NPV EGEAS costs.
- CUB-CW/Inter-31 Please describe any differences in assumptions between the Company's latest Integrated Resource Plan (IRP) and the EGEAS analyses performed in this proceeding.
- CUB-CW/Inter-32 Please identify the discount rate used in the EGEAS analyses and explain why it is an appropriate rate.

### **REQUESTS FOR PRODUCTION**

- CUB-CW/RFP-6 Please provide a copy of the Company's latest IRP.

- CUB-CW/RFP-7      In Appendix A of the Company's December 18, 2008 Supplemental Application filed with the Commission, reference is made to a spreadsheet model that was used to evaluate the proposed environmental upgrade to Edgewater 5. Please provide an electronic copy of this spreadsheet model and all updates of this model with all formulae and inputs intact.
- CUB-CW/RFP-8      Please provide all joint ownership agreements between WEPCO and WPL for the Edgewater 5 unit.

Dated this 9<sup>th</sup> day of April, 2009.

Respectfully submitted,  
CULLEN WESTON PINES & BACH LLP  
*/s/ Kira E. Loehr*

By: \_\_\_\_\_  
Kira E. Loehr  
Attorneys for CUB and Clean Wisconsin

122 West Washington Avenue, Suite 900  
Madison, WI 53703  
(608) 251-0101 phone  
(608) 251-2883 fax  
E-mail: [loehr@cwpb.com](mailto:loehr@cwpb.com)